

# TAN WEI ZHEN

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## Skills

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- C/C++, C#, Java, Python(Pandas, Scikit-learn)
- SQL
- OpenGL, FMOD,
- Visual Studio, Visual Studio Code
- Android Studio, Kotlin, Jetpack Compose
- Unity
  - Photon PUN 2/Fusion, Azure Playfab, Firebase, XR Interaction Toolkit
- MySQL, Microsoft SQL Server
- Microsoft Internet Information Services(IIS)
- Ubuntu

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## Education

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**DigiPen Singapore & Singapore Institute of Technology** Aug 2022 - May 2027

Bachelor of Science in Computer Science in Real-Time Interactive Simulation

**Nanyang Polytechnic** Apr 2019 - Mar 2022

Diploma in Game Development & Technology

- MSC Maritime Digital Challenge Kanda Challenge Statement Champion (2021)
  - Developed VR prototype for Oculus Quest 2 using Unity Engine

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## Work Experience

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### Unity Developer

Turbo Jatt

Oct 2024 - Feb 2025

- Metaverse app, Unity3D Multiplayer Mobile project using Photon Fusion
- SMS verification using Twilio
- Send/Retrieve data from Tencent Cloud Object Storage

### Game Development Internship

YOOZOO Games

Mar 2022 - Jun 2022

- Indoor navigation app, Unity3D Mobile AR project using ARFoundation
- Worked on chatbot prototype using gRPC

### 3D Intern

RoyceMedia Technologies

Nov 2021 - Feb 2022

- Digital Twin to monitor building equipment, Unity3D WebGL project
- Equipment viewer, Android AR prototype using ARFoundation
- Made a simple multiplayer game prototype to learn how to use MQTT messages
- Create/Update REST API calls with ASP.NET core to send/retrieve data from database
- Send and Retrieve data using MQTT

### Robotics Trainer

School of Robotics

May 2019 - Jan 2020

- Plan and prepare teaching materials
- Train and engage students with STEM Robotics & Coding enrichment courses
- Guide students to develop problem-solving and computational skills

# Projects

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<b>3D Custom Game Engine and Tools   Team of 12</b>	Sep 2025 - Ongoing
Editor	
<ul style="list-style-type: none"><li>• C++, OpenGL Windows Application able to support making a 3D physics-based action adventure game.</li><li>• Asset Browser with Filewatcher, Assets Pipeline with multi-threading to speed up asset compile times, and helped with game programming.</li></ul>	
Engine	
<ul style="list-style-type: none"><li>• Static library</li><li>• Designed the core engine architecture with EnTT(and Reflection (entt::meta)), did the Animation System and Materials Pipeline, and Resource Manager with lazy loading.</li></ul>	
Resources Tool	
<ul style="list-style-type: none"><li>• Command-line Application.</li><li>• Compile assets such as textures, fonts, 3D models etc using compressorator, freetype, assimp into resources for the engine.</li></ul>	
<b>Customer Database Android App</b>	Sep 2025
<ul style="list-style-type: none"><li>• Made with Unity for Android platform with Firebase for real-time database updates</li><li>• Designed an interface for tracking customer details and visit history.</li></ul>	
<b>3D Graphics Engine</b>	Jul 2025 - Aug 2025
<ul style="list-style-type: none"><li>• C++, OpenGL project with Dear ImGui, Eigen library</li><li>• 3D model loading using assimp, primitives intersection tests, Bounding Volume construction(AABB,spheres,OBB), Bounding Volume Hierarchy, View Frustum Culling, Octree, Kd-tree</li><li>• Built from scratch for Spatial Data Structures module.</li></ul>	
<b>2D Custom Game Engine and Tools   Team of 8</b>	Aug 2023 - Apr 2024
<ul style="list-style-type: none"><li>• C++, OpenGL Windows Application able to support making a 2D physics-based platformer game</li><li>• Implemented a custom Entity-Component System based on a Sparse-set data structure for high-performance component data locality</li><li>• Integrated FMOD to support spatial audio and complex sound event handling.</li><li>• Gameplay programming</li></ul>	
<b>VR Multiplayer Training Simulation   Team of 5</b>	Aug 2021 - Nov 2021
<ul style="list-style-type: none"><li>• A virtual reality, real-time multiplayer, account-based, personalised training system(serious gaming)</li><li>• Made using Unity Engine for Oculus Quest 2 with Photon PUN2 and Playfab</li></ul>	